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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,636	09/28/2006	Yoshiharu Ohta	5120-007	3366

7590 09/28/2010  
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EXAMINER
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MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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09/28/2010

PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* YOSHIHARU OHTA  
and YASUYUKI ITAI

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Appeal 2009-010356  
Application 10/594,636  
Technology Center 1700

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Before ADRIENE LEPIANE HANLON, CATHERINE Q. TIMM, and  
JEFFREY T. SMITH, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

## STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-18, all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

### *The Invention*

Appellants' invention is directed to a semiconductor polishing composition that is an aqueous dispersion solution comprising fumed silica. Claim 1 is illustrative:

1. A semiconductor polishing composition comprising:  
fumed silica, a semiconductor polishing composition being an aqueous dispersion solution of fumed silica,  
wherein a content of the fumed silica having a particle diameter of 100 nm or less is 15% by volume or more based on a total amount of the fumed silica.

Claims 1-18 stand rejected under 35 U.S.C. § 102(a), or in the alternative 35 U.S.C. § 103(a), as unpatentable over Chu, WO 2005/007770 A1, published January 27, 2005.

Claims 1-3, 5-8, 12, 13, 15, 16, and 18 stand rejected under 35 U.S.C. § 102(b), or in the alternative 35 U.S.C. § 103(a), as unpatentable over Takashina, US 2004/0040217 A1, published March 4, 2004.

Claims 4, 9-11, 14, and 17 stand rejected under over 35 U.S.C. § 103(a) over Takashina.

### OPINION

The Examiner found that Chu teaches a semiconductor polishing composition that comprises 20 weight percent fumed silica, having the claimed particle distribution. In support of the rejection the Examiner cited Chu's abstract, paragraphs [0020], [0028], [0039], [0044], and claims. (Ans. 4). Thus, the Examiner finds that the claimed invention is anticipated because Chu teaches a composition that comprises the claimed specific distribution of fumed silica particles. (*Id.*). Alternatively, the Examiner concludes that the claimed size distribution would have been obvious because the ranges of Chu and the claimed invention overlap one another. (Ans. 5).

The Examiner found that Takashina teaches a semiconductor polishing composition that comprises 5-30 weight percent fumed silica, having the claimed particle distribution. In support of the rejection the Examiner cited Takashina's abstract, paragraphs [0036], [0047], and claims. (Ans. 5). The Examiner contends that Takashina teaches a maximum particle size which reads on the claimed maximum frequency. Thus, the Examiner finds that the claimed invention is anticipated because Takashina teaches a composition that comprises the claimed specific distribution of fumed silica particles. (*Id.*). Alternatively, the Examiner concludes that the claimed size distribution would have been obvious because the ranges of Takashina and the claimed invention overlap one another. (Ans. 6).

Appellants argue that neither Chu nor Takashina teach a composition that includes fumed silica. Appellants maintain that both Chu and Takashina fail to disclose or suggest a semiconductor polishing composition comprising fumed silica having the particle distribution of independent

claim 1. Appellants further contend that Chu's disclosure regarding particle size and distribution applies to colloidal silica and not fumed silica because Chu discloses problems are known to be associated with fumed particles and superior results are achieved with colloidal silica. (App. Br. 12). Appellants specifically state:

For example, Chu recognizes problems associated with fumed particles at paragraph [0009]. Further, at paragraph [0051] Chu demonstrates the preferred use of colloidal silica when compared to otherwise identical slurries containing precipitated silica, fumed silica and colloidal alumina. At paragraph [0052] Chu summarizes the results of Table 1 as clearly showing "that the polydisperse colloidal silica provides the greatest removal rate while providing a polished surface quality that is superior (smoother) than that achieved with the other three abrasives" (see also Tables II and III).

(App. Br. 12).

Appellants argue that Takashina fails to disclose or suggest a semiconductor polishing composition comprising fumed silica having the particle distribution of independent claim 1. Appellants urge that Takashina's disclosure regarding particle size and distribution applies to colloidal silica and not fumed silica because Takashina discloses problems are known to be associated with fumed particles and superior results are achieved with colloidal silica. (App. Br. 14). Appellants specifically state:

Takashina also discusses disadvantages in the use of fumed silica as a polishing particle (paragraph [0005]). For example, Takashina recognizes disadvantages to the use of fumed silica due to scratches generated on a surface of a polished semiconductor device because of aggregated particles. It is due to the non-aggregative properties of colloidal silica that colloidal silica is used over fumed silica in Takashina.

(App. Br. 14).

*35 U.S.C. § 102 Rejections*<sup>2</sup>

The issue presented for review is: Did the Examiner err in finding that both Chu and Takashina disclose a semiconductor polishing composition comprising fumed silica having the particle distribution of independent claim 1? We answer this question in the negative.

The proper test of whether a publication is a § 102 bar is “whether one skilled in the art to which the invention pertains could take the description of the invention in the printed publication and combine it with his own knowledge of the particular art and from this combination be put in possession of the invention on which a patent is sought.” *In re Elsner*, 381 F.3d 1125, 1128 (Fed. Cir. 2004) (*citing In re LeGrice*, 301 F.2d 929, 939 (CCPA 1962)). In particular, in view of the publication, one must be able to make the claimed invention without undue experimentation. *Elsner*, 381 F.3d at 1128. Disclosures of “certain specific preferences” are relevant to an anticipation inquiry. *In re Petering*, 301 F.2d 676, 681 (CCPA 1962); *see also In re Schaumann*, 572 F.2d 312, 316-17 (CCPA 1978) (holding that preferences can also be set forth by the claims).

Chu and Takashina both disclose that the described range is applicable to abrasive particles. (Chu [0015], [0028], Takashina [0027], [0047]). As set forth above, the Examiner has pointed to the specific teaching in both Chu and Takashina that discloses fumed silica is suitable for the formation of a semiconductor polishing composition having the particle distribution of independent claim 1. (Chu [0020], Takashina [0036]). Consequently, a

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<sup>2</sup> Appellants have not presented separate arguments for all of the rejected claims. We select claim 1 as representative of rejected claims. See 37 C.F.R. § 41.37(c)(1)(vii) (2009).

person of ordinary skill in the art would have been in possession of the claimed invention based individually on the teachings of Chu and Takashina. Therefore we affirm the stated 35 U.S.C. § 102 rejections.

*35 U.S.C. § 103 Rejections*<sup>3</sup>

We do not find Appellants argument persuasive regarding the § 103 rejection of claims 1-18 over Chu and the § 103 rejection of claims 1-3, 5-8, 12, 13, 15, 16, and 18 over Takashina.

The issue presented for review is: Did the Examiner err in finding that both Chu and Takashina disclose or suggest a semiconductor polishing composition comprising fumed silica having the particle distribution of independent claim 1? We answer this question in the negative.

Appellant's arguments fail to account for the full disclosure of Chu and Takashina that discloses the particle distribution utilized applies to abrasive particles including fumed silica. (Chu [0020], and Takashina [0050]). A reference is available for all that it teaches to a person of ordinary skill in the art. *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (“the fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered”) (quoting *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976)). The Examiner has adequately identified sufficient evidence and provided an adequate explanation as to why a person

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<sup>3</sup> Appellants have not presented separate arguments for all of the rejected claims. Appellants have argued as a group claims 4, 9, 10 and 11. Any claim not separately argued will stand or fall with independent claim 1. We select claim 4 as representative of the separately argued claims. See 37 C.F.R. § 41.37(c)(1)(vii) (2009).

of ordinary skill in the art would have made selections necessary based on the teachings of Chu and Takashina to form a semiconductor polishing composition comprising fumed silica (abrasive particle) having a particle distribution that falls within the scope of independent claim 1.

We also affirm the Examiner's rejection of claims 4, 9, 10 and 11 as obvious over Chu. The Examiner has identified specific portions in the reference for selecting a maximum frequency within the claimed range. (Ans. 8). Appellants' arguments do not adequately identify error in the Examiner's findings. Consequently for the reasons set forth by the Examiner we affirm the stated rejection.

However, we reverse the Examiner's rejection of claims 4, 9-11, 14, and 17 as obvious over Takashina. Appellants argue Takashina merely discloses the range of particle sizes and there is no range of particle size having a maximum frequency as required by claim 4. (App. Br. 15). The Examiner has failed to identify specific portions in the reference for selecting a maximum frequency within the claimed range. (Ans. 9-10). “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

## DECISION

The Examiner’s 35 U.S.C. §§ 102 and 103 rejections of claims 1-18 over Chu and claims 1-3, 5-8, 12, 13, 15, 16, and 18 over Takashina are affirmed.

Appeal 2009-010356  
Application 10/594,636

The Examiner's 35 U.S.C. § 103(a) rejections of claims 4, 9-11, 14,  
and 17 over Takashina is reversed.

AFFIRMED

bar

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